

**VAN BUREN SCHOOL DISTRICT/VAN BUREN HIGH SCHOOL
EARTH SCIENCE ASTRONOMY CURRICULUM 2006-2007**

*Previous Arkansas Earth Science Standards

DAYS	CHAPTER	TOPIC	SUB-TOPICS	LABS	FRAMEWORKS	ACT
5	1, 28, 29	Study of the Universe	Astronomers, exploration, telescopes, electromagnetic spectrum, Big Bang Theory, formation	Simple Spectroscope, Using a Telescope	<p>*ES.2.1 Evaluate the historical and multicultural contributions to the scientific body of knowledge in the earth and space sciences. Topics may include expanding universe, plate tectonics, composition of the Earth and stars, and geologic time; and the works of Galileo, Copernicus Kepler, and Wegener.</p> <p>NS.4.ES.2 Use appropriate equipment and technology as tools for solving problems (e.g., microscopes, centrifuges, flexible arm cameras, computer software and hardware)</p>	ACT 1, 2, 5
4	27	Star Groups	Constellations, maps, galaxies, star clusters, Milky Way, quasars	Nightly Observation and Use of Star Charts	<p>*ES.2.14 Locate common constellations.</p> <p>*ES2.15 Describe the organization of the known universe (solar system, galaxy, cluster, supercluster).</p> <p>NS.4.ES.1 Collect and analyze scientific data using appropriate mathematical calculations, figures and tables</p>	ACT 1,2

6	27	Stars	Composition, temperature, motion, light-year, parallax, magnitude, H.R. Diagram, formation, evolution, nuclear fusion, types, black holes	Draw/Label/Color H.R. Diagram, Parallax, p. 551	<p>*ES.2.13 Compare Earth's sun to other stars in size, mass, temperature, energy source, position on HR diagram, and states in a star's existence.</p> <p>NS.4.ES.1 Collect and analyze scientific data using appropriate mathematical calculations, figures and tables</p>	ACT 1,2
5	28	Sun	Size, temperature, energy, radiation, layers, activity, importance to Earth	Draw/Label/Color Layers of Sun, Solar Viewer, p. 573, Observation of Sunspots via Telescope with Solar Filter, Size and Energy of the Sun, p. 588	<p>*ES.2.2 Understand that the sun is the source of energy for the solar system.</p> <p>*ES.2.13 Compare Earth's sun to other stars in size, mass, temperature, energy source, position on HR diagram, and states in a star's existence.</p> <p>NS.4.ES.1 Collect and analyze scientific data using appropriate mathematical calculations, figures and tables</p> <p>NS.4.ES.2 Use appropriate equipment and technology as tools for solving problems (e.g., microscopes, centrifuges, flexible arm cameras, computer software and hardware)</p> <p>NS.4.ES.3 Utilize technology to communicate research findings</p>	ACT 1,2

8		Solar System	geocentric model, Kepler's Laws, Law of Inertia, planets, location, structure, composition, moons, distance, terrestrial, Jovian, Pluto, asteroids, comets, meteoroids	Completion of Planet Information Sheets for Comparison, Crater Analysis, p. 612	<p>*ES.2.2 Understand that the sun is the source of energy for the solar system.</p> <p>*ES.2.13 Compare Earth's sun to other stars in size, mass, temperature, energy source, position on HR diagram, and states in a star's existence.</p> <p>NS.4.ES.1 Collect and analyze scientific data using appropriate mathematical calculations, figures and tables</p>	ACT 1, 2, 3, 4, 5, 6
6	30	Moon	Exploration, structure, craters, rocks, development, motions, tides, eclipses, lunar cycle, calendar, satellites of other planets, planetary rings	Draw/Label Phases of the Moon, Draw/Label Solar and Lunar Eclipse, Construct a Julian or Proposed Calendar and Compare to Gregorian Calendar, Eclipses, p. 625	<p>*ES.2.13 Compare Earth's sun to other stars in size, mass, temperature, energy source, position on HR diagram, and states in a star's existence.</p> <p>NS.4.ES.1 Collect and analyze scientific data using appropriate mathematical calculations, figures and tables</p>	ACT 1, 2, 3, 5, 6

6		Contributions of NASA and Future of Space Exploration	History, exploration, contributions to science/technology, careers, politics	Research Past, Present, and Expected Future Contributions of NASA, Evaluate Impact of Politics (Global and National) to Space Technology and Mission	<p>SP.3.ES.5 Evaluate the impact of different points of view on health, population, resource, and environmental issues: governmental, economic, societal</p> <p>SP.3.ES.6 Research how political systems influence environmental decisions</p> <p>NS.4.ES.1 Collect and analyze scientific data using appropriate mathematical calculations, figures and tables</p> <p>NS.4.ES.2 Use appropriate equipment and technology as tools for solving problems (e.g., microscopes, centrifuges, flexible arm cameras, computer software and hardware)</p> <p>NS.4.ES.3 Utilize technology to communicate research findings</p> <p>NS.5.ES.2 Explain why scientists should work within ethical parameters</p> <p>NS.5.ES.4 Explain how the cyclical relationship between science and technology results in reciprocal advancements in science and technology</p> <p>NS.6.ES.1 Research and evaluate science careers using the following criteria: educational requirements, salary, availability of jobs, working conditions</p>	ACT 1, 2, 3, 4, 5, 6
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ACT Science Reasoning Curriculum Strands

1. Interpretation of Data and Other Information
2. Data Representation
3. Identification of Patterns, Trends, and Relationships of Data

4. Purpose of Experimental Procedures
5. Process of Scientific Investigation
6. Identification of Conclusions, Hypotheses, Models or Predictions